

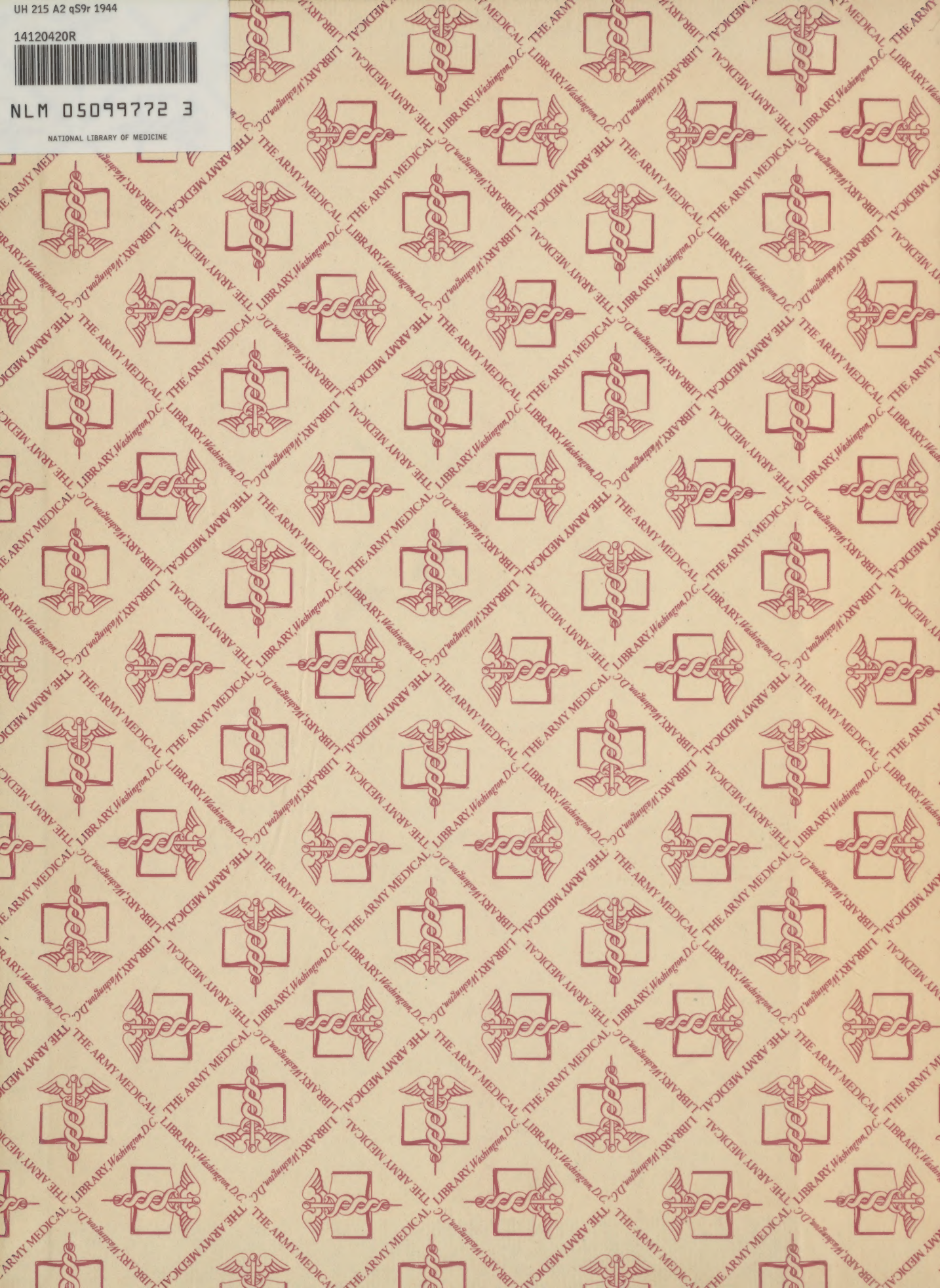
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MAY 10 1944

OFFICE OF THE SURGEON-GENERAL

Report Of

Medical Department Activities

in

GREENLAND

by

O. R. HILL
Lt. Colonel, M. C.

Surgeon, Greenland Base Command

6 September 1944

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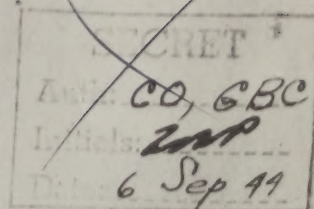
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Interview with Lt. Col. O.R. Hill, M.C., O-318401

Surgeon
of
Greenland Base Command
and
188th Station Hospital



Introduction: Otho Reed Hill, Lt. Colonel, Medical Corps-Surgeon Greenland Base Command; Surgeon, Army Air Base A.P.O. #858, New York, N.Y.; Commanding Officer, 188th Station Hospital - from 9 November 1943.

1. Geography and Climate:

A.P.O. #858 is in southwestern Greenland at the head of Tunugdliarfik Fjord. The terrain is very mountainous and rugged. The summers are rather short, mild and moist; the fall is short; the winters are long and tempestuous. The spring is late, coming in May and June. The same applies generally for A.P.O. #615 and A.P.O. #679 but A.P.O. #859 is above the Arctic Circle and has a much colder and drier climate in winter. This base has more good weather for flying than any other base.

A.P.O. #615 is located at Ivigtut on the west coast of Greenland. It will be completely closed up by winter and the hospital inactivated. A.P.O. #859 is at the head of Sondrestrom Fjord on the west coast of Greenland and about 15 miles north of the Arctic Circle. A.P.O. #679 is at Ikatek just north of Angmagssalik on the east coast of Greenland. All bases except A.P.O. #615 have an airfield. The terrain is essentially the same at all bases.

The total population of Greenland is about 16,000 and most of these are found along the west coast of Greenland from Cape Farewell up to about 70°N. A.P.O. #615 is the only base located near a settlement and it is almost in Ivigtut. A.P.O. #858 and A.P.O. #679 are fairly close to small native villages. Of the population all except 600 or so are Greenlanders (Eskimos with a more or less generous admixture of European blood). The remainder are mostly Danes. The natives are simple and friendly. Tuberculosis is a tremendous problem with them; however, there is very little contact between the Armed Forces and the natives.

It should be understood that communication and travel in Greenland is very restricted. There are no roads, railways or telegraph systems. Travel was an almost entirely by boat, dog sleds being found only in northern Greenland. The Armed Forces travel by boat and air. Each colony or settlement of any size has a radio station and some of them have weather stations.

2. Organization and Personnel:

The strength of the Command, as of 5 August 1944 was divided up as follows:

Peak strength of Command was 3 Oct 43 as follows:

A.P.O. #858	2193	3600
A.P.O. #859	539	931
A.P.O. #679	373	377
A.P.O. #615	203	554
Total:	3308	5606

Each post is composed of service units, AACS, Weather, Air Corps, Infantry, (nearly all withdrawn now) and Anti-Aircraft (nearly all withdrawn now). In

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addition, at A.P.O. #858 there are 200 Coast Guard and Navy personnel stationed ashore. There are a number of Coast Guard Cutters, Sub-chasers and other boats stationed at A.P.O. #858 and A.P.O. #615 or that come in and out.

The Medical Department Personnel is as follows:

A.P.O. #858	188th Sta. Hospital	200 beds	15 Nurses	14 Officers	110 E.M.
A.P.O. #859	190th Sta. Hospital	25 beds		4 Officers	25 E.M.
A.P.O. #679	191st Sta. Hospital	25 beds		4 Officers	16 E.M.
A.P.O. #615	189th Sta. Hospital	25 beds		4 Officers	25 E.M.

Besides the 188th Station Hospital at A.P.O. #858 there are 2 flight surgeons and 5 enlisted men of the medical detachment of the 1st Arctic Search and Rescue Squadron. One Veterinarian is attached to the Greenland Base Command and he divides his time between A.P.O. #858 and A.P.O. #859 where the Army has sledge dogs. In addition, he periodically visits the other 2 bases, making meat and meat products inspections. Finally, there has recently been one medical officer assigned to the Ice Cap Detachment. The base of operations for this group has been the east coast of Greenland but is being moved to A.P.O. #858.

There are no civilian employees. The last of the civilian contractors left in February 1944.

In my opinion there is only one inadequacy in the Tables of Organizations. There is no provision made for ratings, or extra men, for outpost duty. Twelve outposts mainly weather stations and AACS installations, are maintained besides the 4 main bases. One medical aid man has been kept at each of these in the past. As all grades and ratings in a hospital T/O are for duties in these hospitals, no provisions are made for men on Detached Service. The highest ratings available would be T/5 and it is felt that 6 or 8 months continuous duty at an isolated outpost is deserving of better than this, particularly as the weather and AACS personnel at these outposts get ratings better than T/5.

Where possible all hospitals have been operated under their T/O strength.

3. Operations:

There were several reasons why troops were sent to Greenland, among them being; a. securing the cryolite mine at Ivigtut-at one time this mine was the principal source of cryolite (necessary for the manufacture of aluminum) for the United States and Canada; b. securing Greenland against occupation by the Germans and thus protecting the North American Continent; c. providing airfields for the ferrying of tactical planes to Europe; d. providing weather stations and weather data; e. providing AACS facilities. a. and b. have been eliminated and a reduction of troop strength has been effected this summer as a result.

The medical mission has been to provide care for these troops. In addition, to furnish hospital facilities for the Greenland Patrol (Coast Guard Vessels), Naval ships, merchant ships and employees of the civilian contractors. This last was terminated early in 1944 but at one time there were 3200 civilian employees at the various bases.

In caring for the troops, 4 hospitals were provided at the 4 main bases. In addition, an enlisted man of the Medical Corps was provided for each of the outposts and at 5 of the larger outposts (3 now abandoned) a medical officer was provided. At present only one outpost, where there is an emergency landing field has a doctor.

Medical protection was provided for several small expeditionary forces sent to the northeast coast of Greenland to eliminate German weather stations.

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4. Medical situation

a. Hospitals

(1) The 188th Station Hospital, at A.P.O. #858, is located about 1 1/2 miles from the airfield and away from the main camp, in a narrow valley on a filled in gravel flat at the head of a small lake. This area does not drain too well after a heavy rain or thaw. But such happenings are infrequent. There are 32 buildings on 22 acres. 29 of these buildings are connected by heated and insulated corridors. The type of construction is the regular cantonment type with insulation and a central steam heating system. All buildings are warm. Electricity is provided by a separate generator plant in the hospital area. There is a separate garage, that can be heated with accommodations for 8 vehicles. There is a separate fire hall for the hospital area. Two of the five warehouses are heated. This hospital was designed as a 250 bed unit but only 5 wards (2 standard wards, 2 combination wards and 1 detention) were finished completely of the 9 erected. The other 4 wards are used for a combination theatre and chapel, a Red Cross center and gymnasium, a Physiotherapy ward plus linen exchange and canteen shop and the last ward is used for an engineer and utility detachment that keeps up the hospital. There is running hot and cold water with a sewage system.

150 beds have been set up but there is quickly available space for at least 300 patients. At present the T/O is that of a 200 bed hospital. The highest patient census was 148. The average winter census (1943-44) was 90-100. The average summer census (1944) 50.

With the original task force that arrived 6 July 1941 was a medical detachment of 2 officers and 14 enlisted men. They set up a 10 bed dispensary under tents. In October 1941 they moved into their first building. 6 June 1942 the hospital moved into larger quarters. This was a warehouse that had other buildings added to it from time to time until there was a bed capacity of 60. This capacity was taxed to its utmost and quarters cases and neighboring barracks were used, as needed, until December 1943, when the present buildings were occupied. Cost of present hospital \$1,769,022.

(2) The 189th Station Hospital, at A.P.O. 615, is located right in the camp, on a rather rocky hill. It drains very well. The hospital consists of 2 buildings connected by a heated hallway and 2 more unconnected buildings. The buildings are modified barracks, built from prefabricated wood sections. These buildings are not insulated. One new wing is insulated. There is a large Duo-therm type oil heater with a fan and warm air conduits for the main building. The others are heated by single oil stoves set at intervals. The heating has been adequate. There is electricity and hot and cold running water. There is also an adequate sewer system. The one warehouse is heated. The buildings, as used were taken over from the U.S.E.D.

The T/O is that of a 25 bed hospital but there is space for 50 beds. 40 beds have been set up. There have been as many as 80 patients in the hospital at one time. The average winter census (1943-44) was 15-20. The average summer census (1944) around 10.

The first troops arrived at Ivigtut 18 March 1942. The first dispensary was set up in 2 rooms in a house in the village of Ivigtut. In June 1942, part of the present main building was occupied and 8 beds set up. The 189th Station Hospital was activated 3 September 1942. Cost of hospital \$175,000.

This base is in the process of being shut down and it is anticipated that the 189th Station Hospital will be inactivated by the winter of 1944.

(3) The 190th Station Hospital, at A.P.O. #859, is located about 1/2 mile from the airfield in the main camp area. The grounds are a leveled off silted area at the head of a fjord, it drains well. The hospital consists of 6 buildings, all unconnected and each over 100 feet apart. The main building is a remodeled H type mess hall. The others are regular barracks constructed of prefabricated wood

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sections. There is no insulation in any buildings. Heating is by spaced oil heaters. In severe cold (sometimes -40° or less) the buildings are not warm. There is hot and cold running water in the main building and, also in an outside latrine for the enlisted men of the detachment. This water is heated in tank trucks to the inside tanks in these buildings. In severe cold there have been times when the water has frozen. There is no sewage system but chemical toilets are used. "Honey Wascans" drain these fairly but even in severe cold there is difficulty with freezing. One warehouse, at the hospital, is heated. Another, 9 miles away, is unheated.

The first troops reached this location 7 October 1941. A small hospital was completed at the Port area 10 December 1941. The airfield was to be built 9 miles away but the head of the fjord was so shallow that boats could not go any further. So, roads had to be built, from this port area where all supplies and building materials were landed, to the main camp and airfield site. The 190th Station Hospital was activated, September 1942. An elaborate, 200 bed hospital was to be built at this Port area and 7 or 8 buildings were actually started. Common sense prevailed and an H time mess hall at the airfield was converted into a hospital of 50 beds in the summer of 1943. This was occupied 22 September 1943 and the old U.S.E.D. Hospital at the Port area, (also a converted mess hall) was abandoned as well as the new construction that had been started. 29 September 1943 the T/O was reduced from 200 bed to 50 bed. 1 July 1944 the T/O was further reduced to 25 beds. Cost of hospital \$632,000.

At present 25 beds are set up but by using the other buildings available up to 100 beds could be set up. The highest census was 87. During the winter (1943-44) the average census was 30-35, summer (1944) 15-20.

(4) The 191st Station Hospital, at A.P.O. #679, is located about $\frac{1}{2}$ mile from the airfield, away from the main camp, on the lower slope of a mountain overlooking a lake. The grounds drain well. There are 4 buildings, 3 of them connected by corridors that are poorly heated. Those buildings are all insulated modifications of the regular cantonment type hospital. They are heated by spaced oil heaters. The heating is adequate. There is hot and cold running water in the hospital, also a sewage system. In cold weather, (below -15°) there is sometimes trouble with pipes freezing. There is one heated warehouse.

The T/O was set up in September 1942 as 150 beds. On 17 July 1943 the T/O was reduced to 50 beds. 1 July 1944 it was further reduced to 25 beds. The greatest patient census has been about 35. Average winter census (1943-44) was 10-15. Average summer census (1944) was 5-10. Up to 100 patients could be accommodated easily. 25 beds are kept set up.

The first troops reached this location 2 November 1941. Shortly after a small U.S.E.D. hospital was set up. This was taken over 26 June 1943 by the Greenland Base Command (ASF). Cost of hospital \$446,000.

b. Professional Service

- (1) Surgery
- (a) Evacuation

1. Patients come to the 188th Station Hospital by post bus or by ambulance. If they are being evacuated from other parts of Greenland, they come to this post by air or boat, as the other hospitals evacuate to the 188th Station Hospital. Patients are evacuated from this hospital to the United States by air mainly, but sometimes by boat.

2. Chest wounds are the only special problem in cases evacuated by air. No chest injuries have been evacuated but one spontaneous pneumothorax was evacuated and oxygen (by mask) was furnished and a canula placed in pleural cavity so that air could be withdrawn in case of dyspnea at high altitude.

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12. Occasionally accidents occur in the mountains surrounding the posts among hiking and skiing parties. Evacuation by basket litter is laborious and time consuming due to the rugged terrain. Evacuation from any part of Greenland is frequently delayed because of bad flying conditions or ice packs preventing boat transportation.

4. This command is not in combat zone so no comment on wounds.

(b) During the first 8 months of 1944, 39% of the total admissions to the 198th Station Hospital were surgical cases. This is about the same for other hospitals in Greenland. Infections and contagious diseases are not frequent in Greenland. Injuries have been common due to the rugged terrain, construction work and ship loading and unloading.

(c) Battle Casualties:

1, 2, 3, 4, 5, 6 do not apply to this command. The only battle casualties seen are air evacuees from L.T.O. to United States.

(d) Specific Types of Wounds:

1. Compound fractures complicating extremity wounds have been infrequent

2. Bi-malleolar fractures of the ankle have been most common and are attributed to the rugged terrain. Fractures of the lower 1/3 of the fibula are next most common. Fractures of the shafts of long bones have been infrequent

2. No peripheral nerve injuries seen with wounds.

4. No major vascular injuries complicating extremity wounds seen.

5. No chance for special observation on types of wounds of the chest abdomen and head.

(e) Plasma: The supply is adequate and easily available. There have been no reactions.

(f) Whole Blood: On the infrequent occasions that whole blood has been used, the donors were obtained from volunteers in the organization. The blood can be stored for a short time in refrigerators or during the winter on the outside. There has been one reaction, with temperature of 106.4 three hours after transfusion. His temperature was normal the following day. It is our observation that plasma is as efficacious for treatment of shock as whole blood.

(g) Specific Infections:

1. Gas Gangrene--No cases seen.

2. Tetanus--No knowledge of any case.

3. Aseptic Hepatitis and abscess--One case of liver abscess has been treated. Stool examinations were negative for parasites and the patient was evacuated to United States for further treatment.

4. No other specific infections.

(h) 1. Sulfanilamide powder is routinely used locally in compound fractures, deep lacerations and intra-abdominally in suppurative cases. The results have been good. This is supplemented by oral or intravenous administration in febrile cases. In clean cases that run a febrile course, sulfanilamides are used generally. These drugs have been very valuable.

2. Penicillin has not been used in the treatment of gas gangrene. There have been no surgical infections at this hospital this year.

(i) Special Surgical conditions:

1. Trench foot--No cases seen.

Immersion foot: sixty-five cases were studied 14 months after immersion following the sinking of a transport in the icy waters. The average time of immersion was five and one-half hours. Complaints of rest pain, numbness of lower extremity and increased perspiration of foot are common. Plantar ischemia, superficial varicosis and decreased peripheral arterial pulsation of the dorsa of pedis artery existed in a high proportion of cases and was thought to be due to fibrosis of the extremity, secondary to initial inflammatory reaction after immersion rather than to secondary angiospasm.

Frost bite is treated by the current recommended method i.e. elevation of extremity, ice bars, protection, and gradual thawing. We offer no

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criticism, of this procedure.

2. Blast injuries--No cases seen.

2. Burns; In general these cases are treated by cleaning with white soap, removal of loose skin and application of vaseline pressure dressings. This routine is preferred to other methods in most cases.

(j) Anesthesia:

1. The agents used in order of frequency at the 188th Station Hospital are: (a) 56.8% local injection of novacaine (1%-2%) (b) 16.2% procaine hydrochloride (spinal) 100 mgs (46%) and 150 mgs (54%), (c) 6.1% Sodium Pentothal 2% solution, (d) Cocaine solution 2.7% (4) (e) 1.0% Nupercaine, (f) 0.4% Ether, (g) 0.2% Pontocaine (h) 0.2% Butyn, (i) 16.4% No anesthesia.

2. Local and regional anesthetics are preferred if the case permits because the surgeon can act as his own anesthetist thus requiring less personnel. Sodium pentothal has been very satisfactory because of rapid, easy induction, lack of post anesthetic nausea and easy administration. Cocaine and its derivatives have been used mostly in L&T work. There have been no anesthetic deaths.

(k) Surgical Supplies:

1. The TBA seems adequate for station hospitals in general. However, the 188th Station Hospital is in a very separate category. If it were near a general hospital where patients could be readily evacuated for surgery all would be well. However, this hospital's function is rather unique since it often functions in the manner of a regional hospital, cases are often referred here for diagnosis, treatment and disposition from the other hospitals in Greenland. Therefore the TBA for a hospital of 200 beds is not adequate for the 188th Station Hospital to perform its function. However, special items of equipment which were requisitioned were supplied in most cases.

2. No comment

3. Special instruments and supplies not called for in the TBA were requisitioned and received in most cases.

(1) 1. Surgical specialists have been available where most needed.

2. The T/O's are quite satisfactory in regards to surgical personnel.

3. No suggested changes.

(m) No criticisms of surgical policies or suggestions.

(2) Medicine

(a) None of the diseases following have been diagnosed during my stay; amebic dysentery, bacillary dysentery, dengue, filariasis, hepatitis, leishmaniasis, malaria, schistosomiasis or typhus fever.

The few fungus infections have been epidermophytosis of the feet and sometimes of the hands or other areas. In this climate the usual "athletes' foot" is not as severe as in a warmer climate. They have responded to treatment well and I believe all returned to duty.

Psoriasis becomes worse as do mild cases of ichthyosis. Several such cases have not responded to treatment have been returned to the United States.

One case of meningococcus meningitis (so diagnosed but organisms never recovered) treated by penicillin and sulfanamides, recovered and returned to duty.

The few cases of peptic ulcer diagnosed have been tried on diet and powders. Most of them have been returned to the United States as few stay cured any length of time

Tuberculosis has been infrequent, only 3 or 4 cases with a positive diagnosis. All returned to the United States.

Penicillin and sulfanamides have cured all except one or two cases of gonorrhea. These were finally returned to the United States. There is really no venereal problem.

(b) Penicillin has been available to this command, since February 1944. 50 units are received automatically each month from the Boston Port of Em-

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barization. This is shared with all 4 hospitals and at times the Coast Guard has been given some. The supply has been adequate.

Our experience has been rather limited but 4 cases of gonorrhea have been cured (2 of them sulfa-resistant). Other cures have been effected in hard-eculum sinusitis, otitis media and hand infections. Improvement was noted in one case of broncho-pneumonia (did not type by Neufeld method from type I through VII) persistent furunculosis, scalp infection and a severe burn. No improvement in acne vulgaris, acne necrotica miliaris of scalp, proctitis (cause starch aureus), mixed wound infection.

All of our doctors want more experience with this new product. So far, they have probably tried it too extensively but efforts are being made to confine the use of penicillin to only recommended cases. Also each case penicillin is used in is summarized and from time to time the series is studied.

(c) No criticism or suggestions concerning present medical policies or for improving care.

(d) The professional journals distributed overseas, (in our command) were adequate but slow in arriving. I would suggest more latitude in selection of professional books for small hospitals. The list is rather limited for a 25 or 50 bed hospital.

(3) Neuropsychiatry

(a) Incidence of Neuropsychiatric casualties.

1. No figures for battle casualties.

2. For the first 6 months of 1944, 4.1% of all cases admitted to the 188th Station Hospital were neuropsychiatric, (total of 52 cases). This represented a number of transfers from the other 3 hospitals. The actual psychiatric figure for the same time was 3.2%. For the same length of time the psychiatric admissions for this command were 2.3% of all admissions.

3. The annual rate per 1000 for A.P.O. #858 (188th Station Hospital) for the first 6 months of 1944 is as follows:

	Jan.	Feb.	Mar.	Apr.	May	June
Psychiatric	11	17	40	20	42	25
Neurologic	0	0	22	16	5	0

4. It is the consensus that mainly those individuals with predisposing factors are those that breakdown.

5. Officers held out perhaps a bit better than enlisted men but proportionately they have a bit more freedom and more privileges so shouldn't have the sense of discrimination that many soldiers complain of.

6. The cases referred to in par. 4b (3) (a) 2 above, were divided as follows:

Psychoneurotics (68.4% of total)

Type	No of Cases	%
Anxiety	15	28.5
Mixed	12	22.8
Hypochondriasis	3	5.7
Psychopathic personality	3	5.7
Hysteria	2	3.8
Neurocirculatory asthenia	1	1.9

Psychoses (7.6% of total)

Schizophrenia	1	1.9
Paranoia	2	3.8
Manic depressive	1	1.9

The rest were neurologic cases. There were no true "exhaustion" cases.

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2. For the period of 1942 to July 1, 1944 there were 8 A.O.C. cases, 63 Summary Court Martials, 43 Special Court Martials, 7 General Court Martials and 2 suicides. There were 2 suspected self inflicted wounds but, neither was proven.

(b) Treatment and Disposition of neuropsychiatric cases.

1. All of the psychoses, 10 of the psychoneuroses and one of the neurologic cases were returned to the United States.

2. No experience.

3. Sedatives, reassurance, psychotherapy and occupational therapy are all used. Also early return to duty. We have used no group psychotherapy as such but each patient goes to the hospital theatre, orientation lectures, and reconditioning classes with other types of patients.

4. There is no neuropsychiatric reconditioning center in this command.

5. There is no demand for "limited service" personnel but in so far as possible men in this former classification are used rather than being sent back.

(c) Dynamics of Neuropsychiatric cases.

1. There is no combat in our area. Practically everyone wants to go home. Many men and some officers can not see any reason for their being long in Greenland since the war is going so well. All personnel believe that troop strength could be reduced further and that maybe they will be the lucky ones to profit by such a reduction. A sense of duty keeps most individuals going and is quite evident from corporals on up. No especial anger against Germans, many would like to fight against the Japs. Not many officers or men exhibit much spontaneous aggressiveness. Perhaps this would change in a more active theatre.

2. "Telling why", in my opinion works much better than giving orders arbitrarily.

3. No mass panic or group fear reactions recorded.

4. I'd say that the majority accept the idea that every one is afraid in certain circumstances.

5. The only enemy propaganda we are exposed to are German broadcasts in English. I don't think it has much or any effect, except possibly increase homesickness.

6. Most officers and men that I have heard express themselves are rather bitter and antagonistic toward strikes. Much of this is automatically laid against Labor. The general opinion is that Labor (and other groups, as farmers management, etc.) have been selfish and have profited financially even to slowing and impeding the war effort. Many of the enlisted men feel that the country "owes them" plenty to make up for this and intend to "do something" about it when they can. Much of this is undoubtedly just talk but there is a deep seated resentment against strikes and a firm conviction that in cash and benefits the country can not do too much for them (soldiers). The former American Legion activities may look small compared to the future demands of present soldiers.

7. Most tactical troops have been removed and there is no combat. However, I think there is some talk among the troops about peace terms. Few have any definite proposals or even much knowledge of the complexities of making a lasting peace. The few ideas I have heard have been for harsh and drastic treatment of both Japan and Germany, so as to prevent any possible recurrence of another war with them. There has been a little loose talk about an "inevitable" war with Russia.

8. Admiration of the Russian fighting qualities is general. Also rather general approval of letting Russia deal with Germany after the war. The British are accepted rather as a matter of fact and not too warmly. Quite a few feel that the British are using us for their own Empire building. Churchill

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is generally admitted, perhaps as much as Stalin. Canada and Australia are held in more esteem than the British. France and other countries are not discussed much as allies.

2. All personnel in Greenland are convinced that serving there subjects them to unusual mental stress and strain. Many are introactively on the outlook for abnormalities in themselves and all are more than usually alert in detecting peculiarities in others. Much joking is done about this but it is not all in the spirit of fun. The general attitude to a neuropsychiatric patient is sympathetic and helpful, perhaps because many feel, "well it could have happened to me". This is even reflected in the doctors, most of them giving the men the benefit of the doubt in vague complaints. Although a few go to the other extreme and think quite often "coldbricks" take advantage of the sympathetic attitude toward neuropsychiatric problems.

(4) Reconditioning.

(a) In our 4 hospitals only 2 have instituted a reconditioning program, the 188th Station Hospital and 190th Station Hospital. The other 2 have informal programs but the number of patients in these hospitals have not justified a formal program. I have felt that the program has been handled adequately.

(b) Physical reconditioning is started while the patient is still confined to bed in the 188th Station Hospital. All of the success below pertain to this hospital.

(c) Adequate attention is given to corrective exercise directed toward restoration of function of a disabled part.

(d) Physical training is progressive so that when a patient is discharged to duty he should be able to resume full duty that day.

(e) Library facilities are available in the hospital.

(f) There are no educational classes conducted except orientation.

(g) We do not keep patients long enough for the U.S. Armed Forces Institute Courses. On this post (A.P.O. #858) the orientation officer estimates that perhaps 40% of the men are interested in such courses and that almost 5% are taking some courses now.

(h) The diversional handicraft program of the Red Cross has been supplemented a bit by adding a small carpenter shop. I think the program is adequate for orthopedic and neuropsychiatric patients.

(i) From 1 January 1943 to 30 June 1944, inclusive, 3695 patients were admitted to the hospitals in Greenland. 94% were returned to duty. Of those returned to duty, I'd estimate perhaps 20% had participated in a reconditioning program. The 2 formal programs were not set up until this year. From now on 100% of the patients in the 188th Station Hospital and 190th Station Hospital will participate.

(j) The patients really seem to enjoy the program.

(k) An unused ward has been converted in to a reconditioning ward.

(l) The program is supervised and operated by 1 medical officer, 2 female Red Cross Workers and 1 enlisted man, all well trained.

(m) (n) & (o) There are no blind or deaf casualties. No provisions are made for such cases or any need. Such cases would be promptly evacuated to the United States.

(5) Dental

(a) Dental supplies and equipment have been satisfactory and adequate

(b) Replenishment requisitions for dental equipment are received when required.

(c) Two of the hospitals had x-ray facilities for taking prosthetic dental appliances, one, the 188th, has excellent facilities.

(d) True Vincent's Stomatitis is rare in Greenland. Of the per-

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manently stationed personnel we have had about 18 cases of a very mild type, in the past year. Hospitalization was not necessary for any of the cases. When transient personnel increases there is always a slight pick up in a very mild form of Stomatitis. No severe cases were encountered. A conservative method of treatment was followed. No instrumentation at the first visit, mouth cleaning and spreading with mild antiseptics and a dye, usually Gentian Violet applied freely and the patient instructed in home care, mouth baths of peroxide and perborate alternately. At the second or third visit the teeth are scaled and chromic acid 3% used at the dried gingiva. Mouth baths were continued and patient watched for a period of 10 days.

(e) Of the total injured military personnel .001% had fractures of the maxillae and mandible. All of these were accidents and not battle casualties.

(f) One case required a denture and service record indicated he had one made.

(g) The replacements recently arriving from the States are in much better dental condition than they have been heretofore. A more careful interproximal examination should be made to eliminate the possibilities of extensive hidden cavities.

(h) There is adequate dental personnel in number at present, however, it seems there should be majority open for a Base Dental Surgeon.

(i) Replacements for dental officers returning to United States furnished prior to their departure.

(j) The promotions from 1st Lt. to Captain was satisfactory. However, those men who arrived in this area in the grade of Captain had no chance for promotion as Captain was the highest grade authorized.

(k) There was not a sufficient number of dental laboratory technicians, (067) available. Practically all, with one or two exceptions, had to be trained by the dental officers.

(6) Nursing

(a) 1. It was thought advisable to only obtain nurses for the 188th Station Hospital. If they had been requisitioned for the others, 4 or 6 Nurses would have been the only women at isolated bases. I feel that the nursing service was adequate. 2 Or 3 nurses were sent out periodically for 2 or 3 weeks TD at the 3 smaller hospitals. They instructed enlisted personnel in various techniques and it was felt such trips were helpful.

A reduction of the T/O of the 188th Station Hospital from 250 to 200 beds did not affect that unit, as pertaining to nursing, as only 15 nurses had been requisitioned. They arrived in January 1944.

2. The clothing equipment provided for the nurses was quite suitable for the climate and type of work. The brown seersucker uniforms have proved to be very satisfactory.

3. Our particular group of nurses were somewhat handicapped because only 2 or 3 of them had been in the army more than 6 or 8 weeks when they were sent to Greenland. As a group they were not conversant with Army Nursing routine nor with customs of the Service. However, they learned quickly through continuing lectures and have adjusted themselves satisfactorily to Army life and our peculiar position.

4. There was very little loss of time by Nurses because of illness.

5. There are no rest camps for Nurses (or other personnel) in Greenland. The trips mentioned in par. (6) (a) 1. above provided some change for the Nurses making such trips.

6. The morale of the Nurses was not affected adversely by working conditions, living conditions, clothing equipment or lack of recreational facilities. However, the sense of isolation and monotony of the every day life did have a depressing affect. They did not mind the weather, as they all came from New England or northern states. However, the long nights of darkness in

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winter and no diseases in man or also caused some slight depression, at times. On the whole, I feel we have been unusually fortunate in our past of nurses as there have been no major problems of health, mental conditions or conduct. I would say their morale has been generally good.

7. I would suggest that greater care be exercised concerning the length of service in the Army before nurses are sent overseas. I would also strongly urge that in our theatre the nurse be replaced after a year. The 18 months service now expected of all who go to Greenland, is not conducive to maintaining a high state of efficiency. It would be best not to replace the whole group at once but a few at a time in order to have less confusion in the nursing service.

(7) Veterinary

(a) There is one Veterinary Corps Captain for the Command. That is enough for officer personnel but he should have 2 enlisted men, one at APO 858 and one at APO 859. There is no T/O vacancy for this. The veterinary officer is assigned to Greenland Base Command Headquarters.

(b) Sled-dogs and manuels are our only animals, with the exception of a few cats, and our diseases are the usual ones with them. Rabies has not been encountered although pseudorabies has been reported in sled-dogs north of our northern most base. Worm infestation is very common.

(c) War dogs not used. The sled-dogs are for rescue parties on the ice cap. They have not been used very often.

(d) There are no work animals other than the dogs. No food animals raised by or available to the Army. In southeastern Greenland there are a few thousand sheep. The possibility of laying mutton and lamb was investigated this past spring. Inadequate facilities for proper refrigeration in shipping caused us to turn this down. Ptarmigan are killed and eaten by Army and Navy personnel. No diseased ones have been found.

(e) No problem with animal diseases.

(f) The quality of meat, meat-food and dairy products received from the United States is good. Due to shipping and storage difficulties there is not a constant supply of fresh frozen meat and eggs. The whole carcass meat received is poorly wrapped. Personally, I think boned frozen meat is preferable to the carcass meat as it is less bulky, and weighs less. The meat, etc. is received in good condition.

(g) See (d) above. Since the lamb was turned down, there is no other local meat, meat-food or dairy products available to the Army. Some salmon, trout and cod-fish are caught from time to time. Usually there is not enough to feed a whole mess hall. These fish are eaten soon after catching by the individuals catching them and their friends.

c. Preventive Medicine

(1) Venereal Disease Control

Venereal Disease is no problem in Greenland. Before the first troops arrived there was an understanding between the Greenland Administration and the United States that no syphilitic personnel would be sent to Greenland. If they did arrive, they would be promptly sent back. This policy has been followed strictly. I recall sending back a captain who had only been in Greenland 2 days. This understanding was made on the basis that there was no syphilis in the Greenland population (according to their doctors) and they did not want any introduced.

Gonorrhea is encountered rarely, as all native settlements are "off limits", except on official business. Occasional cases develop in newly arrived troops from the States, returnees from furloughs or seamen. In the past year only once case of gonorrhea has developed in a soldier that was acquired from a native women.

(2) Epidemiology

(a) This is one of the healthiest places we have soldiers and there just aren't any prevalent diseases. Colds are not as common as in the United States and the few respiratory epidemics we have are usually directly traceable to the arrival of a ship or plane movement. Pneumonia is rare. Understand, this applies to the Armed Forces. The native population has a very high tuberculosis rate. One doctor told me that by the time the native population reached the age of 15 all had a positive tuberculin test. Since our contacts with the native population are so few there is practically no danger.

(b) All required immunizations are kept up including those of the Air Corps.

(3) Tropical Diseases Control

This does not apply.

(4) Sanitation and Hygiene

(a) There is no problem of field sanitation as all troops live in barracks and eat in permanent mess halls.

(b) There is no dysentery. Gastro-intestinal food upsets are very rare with only an occasional case due to individual indiscretion.

(c) I do not know of any cases of louse infestation. A very few cases of scabies or phthirus pubis have been observed, always in freshly arrived troops from the United States.

(d) Screening for mosquitoes and flies is done in the hospitals and messes but not throughout each base as it is not necessary. Insect repellents are available and used, as are head nets, for outdoor activities during about 3 summer months (June, July, August). As nuisances the insects are very bad out of doors.

(5) Sanitary Engineering

(a) Water supply sources are primarily lakes that fill in the winter from ice and snow. At A.P.O. #858 there are wells sunk in the gravel flats near a river from a glacier. There is no treatment of water at any of the 4 main bases. Sometimes, in the late summer the supply of water may be low. At several of the outposts an adequate quantity of water is a problem and the water is chlorinated in Lyster Bags. Regular bacteriological tests are run on water specimens at the 4 main bases and no contamination has been found. In general, the water supplies are adequate.

(b) Waste disposal at 2 of the main bases is by emptying sewage into fjords. The other 2 use pit latrines or chemical toilets that are emptied into the fjord. Garbage is dumped into the fjord. Trash is burned. The methods used are effective but not ideal.

(c) I do not believe it possible to eliminate mosquitoes or flies in the Arctic. I quote from Information Bulletin #13 entitled "The Mosquito and Fly Problem in The Arctic". "Can these flies be exterminated? The answer is--No, not in the Arctic. The region is too vast. There is too much shallow water and other favorable breeding places". I am in complete agreement after living in Labrador and Greenland. True we do not have the tundra with its shallow pools in Greenland but in its place we have innumerable pools in rocky places in the early spring and summer that have no drainage and many are inaccessible to man. In spite of this at several bases and outposts all possible pools of water near the camps have been covered with oil. The decrease in the number of mosquitoes has been questionable.

(d) At no time has there been any Sanitary Corps Personnel on duty in Greenland. At this late date I do not think it necessary to send any.

(6) Occupational Health

(a) The Army, Navy and Coast Guard maintain their own repair shops for vehicles and planes. No civilians are employed. All loading and unloading of ships is done by the Army and the personnel of the ship.

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(b) When the civilian contractors' employees were present they had exactly the same type of medical care as the Army, by Army personnel and in Army Hospitals. But as stated above the last of these left in February 1944.

(7) Laboratories

(a) I think the laboratory service is adequate. However, it would have been nice to be able to do certain agglutination and titre tests. The few times this was necessary for diagnosis, it was necessary to send the blood to the United States. The time involved was 2 or 3 weeks. However, there has been only one technician in Greenland capable of this type of work, and he is now gone.

(b) The personnel has been adequate for the routine urines and blood counts but not for more complicated procedures. The personnel has been properly utilized and all except one or two were trained locally by doctors.

(c) No complaints about equipment or supplies were heard.

(d) We shipped a few specimens to the Army Medical School but not to the Army Medical Museum.

(e) Autopsies are done in 100% of Army deaths. Fortunately, these are few.

(8) Medical Intelligence

(a) Not being in a combat theatre there was no medical intelligence data collected. There are 11 Danish Physicians in Greenland and I have met 5 of them. 4 others have been on our bases or visited by our doctors. There has been close cooperation between the Army Doctors and this group with exchange of ideas. Professional assistance and supplies have been furnished by the Army from time to time.

(9) Nutrition

(a) All posts are on a field ration. This is a mixture of A and B with C supplementation necessary at times during the late winter. The hospital rations are the same, with any extras that are available through the Quartermaster or by purchase from hospital funds from ships or Post Exchanges. There is no local source of food except fish occasionally served in individual messes.

(b) There has been no evidence of nutritional diseases among the soldiers except as follows: During the late winter of 1943-44 an appreciable number of mild secondary anemias were found among soldiers who had served over a year in Greenland. No definite cause has been found for this. Studies are being made of personnel returning from isolated outposts after 6 or 8 months of duty. The diet at these outposts is the poorest and most monotonous of any. So far only a few sub-clinical manifestations (soft gums and ecchymotic areas in the skin with the cuff test) of a low vitamin C intake have been found.

(c) There is always some grumbling about the monotony of the diet but I think it is good, all things considered.

(d) If possible, more fresh fruits and vegetables would be desirable but this depends a great deal on the availability of refrigerator ships. In 1943 several cargoes of such foods had high waste due to poor packing, insufficient air circulation, faulty refrigeration or time necessary for the voyage.

(e) The hospital diets have of necessity been very similar to the field ration and the regular overseas hospital ration has not been available. The light, liquid and special diets for the hospitals have been adequate.

d. Medical Equipment and Supplies

(1) Medical Maintenance Unit not used by this Command since August 1943, the last part of any being received in February 1944.

(a) Items now contained in Medical Maintenance Unit have been found to be in excess of our needs in a non-combat area after the first supplies were received.

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Field Dressings
Abdominal Packs
Alcohol 5 and 54 Gallon
Glycerin
Magnesium Sulfate, 4 and 50 Lb.
Naphthelene Flakes
Oil, Castor
Oil, Cod-Liver
Oil, Cottonseed
Bandage, Triangular
Cotton, Absorbent, and Batting
Gauze, Plain, 100 Yards
Packet, First Aid
Plaster, Adhesive, 1 Inch
Plaster of Paris
Wadding Sheet
Stockinette
Applicator, Wood
Belkan Frame Rope
Cup, Paper
Pin, Safety, Large and Medium
All of Class #9

Petrolatum, 1 and 10 Lb.
Petrolatum, Liquid, Heavy, Gallon
Powder, Developing and Fixing
Protein, Silver, Mild and Strong
Soft Soap, 1 and 25 Lb.
Sulfathiazole Tablets
Talc, Purified
Plaster, Adhesive, 3 Inch
Muslin
Depressor, Tongue, Wood
Gloves, (all sizes)
Razor, Safety, Blades
Splint, Basswood
Stethoscope Tubing
Suture, Catgut, Chromic & Plain, #0,1,2.
Syringe, Urethral, Prophylaxis
Tubing, Rubber
Pad, Prescription
Bag, Hot Water
Button, Large and Small
Clothesline

(2) (a) No Anti-Malarial Drugs needed within this Command.

(b) Biologicals should be on a requisition basis only and should be transported to destination by air.

(c) Surgical instruments and appliances are sufficient for all routine work, but not sufficient for elective surgery or General Hospital work.

(d) Operating lamps are excellent.

(e) Sterilizers are good and in sufficient quantity.

(f) X-Ray equipment is very good, but extra tubes should be kept in stock in isolated commands such as Greenland

(g) Dried blood plasma is in excess of needs for a non-combatant area.

(h) Except for special projects and outposts, Medical kits and chests (except chest 60) are not needed within this Command. What chests are needed should be modeled along the lines of Case, First Aid (Armed Guard) Medical Department, U.S. Navy. Stock Number S2-510.

(i) Pole litters are in excess. Anesthesia apparatus of the Heidbrink type is not liked by some doctors. These machines were not used much in our Command.

(j) Field dressings are not needed.

(k) Tentage is not needed or used.

(l) Generators and electrical apparatus is good.

(m) Tables are in sufficient quantity.

(n) Field equipment not needed after first few months.

(3) Quinine supplies have all been returned to the United States.

(4) Packing lists of complete contents of each container should be placed both on the outside and inside of each container so that they will be available to the receiving office. A consolidated shipping ticket should accompany each shipment. Each shipment should be stored as much as possible as one unit. Medical Maintenance Unit should not be divided into less than one-half a unit and items that have lost their usefulness by this cut should either be excluded or not cut at all. (Example: Once we received one foot of clothesline in a fractional shipment, this was useless for all practical purposes.)

(5) Spare parts should be included on all items that have a short life span. Rusting has not been a problem.

(6) Optical Repair Unit is not on hand nor is there need for any

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5. Observations, Data and Recommendation

a. I recommend arranging a T/O for the Base Command Medical Detachment providing in numbers and by ratings for E.M. for outpost duty and clerks for the Base Surgeon, Base Veterinarian and Base Medical Supply Officer.

b. More extensive orientation service for all personnel particularly needed since the war in Europe is going so well. The need for some to stay in Greenland should be brought out because everyone is thinking of going home.

c. Nurses should only serve in Greenland one year in my opinion.

d. As soon as possible trying to establish a one year tour of duty for all personnel - particularly needed in connection with b above.

e. More careful selection of nurses to go overseas is needed. I don't think it wise to send them overseas with only 6 or 8 weeks service in the Army as our group was.

f. Extra X-ray tubes should be provided for isolated Commands where there is no medical supply depot or sub-depot.

g. I would suggest considering the case, First Aid (Armed Guard) Medical Dept., U.S.M., Stock Number S2-510 as a pattern for medical kit for small isolated outposts, as weather stations, etc.

h. A better system of sending packing lists with shipping containers should be devised. The outside list is often torn off. A duplicate list could be put in each container.

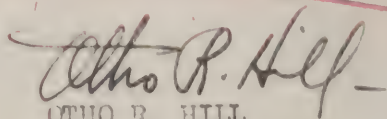
i. It is suggested that a consolidated shipping ticket be sent with each shipment.

j. It is also suggested that Medical Maintenance Units not be divided into less than $\frac{1}{2}$ a unit.

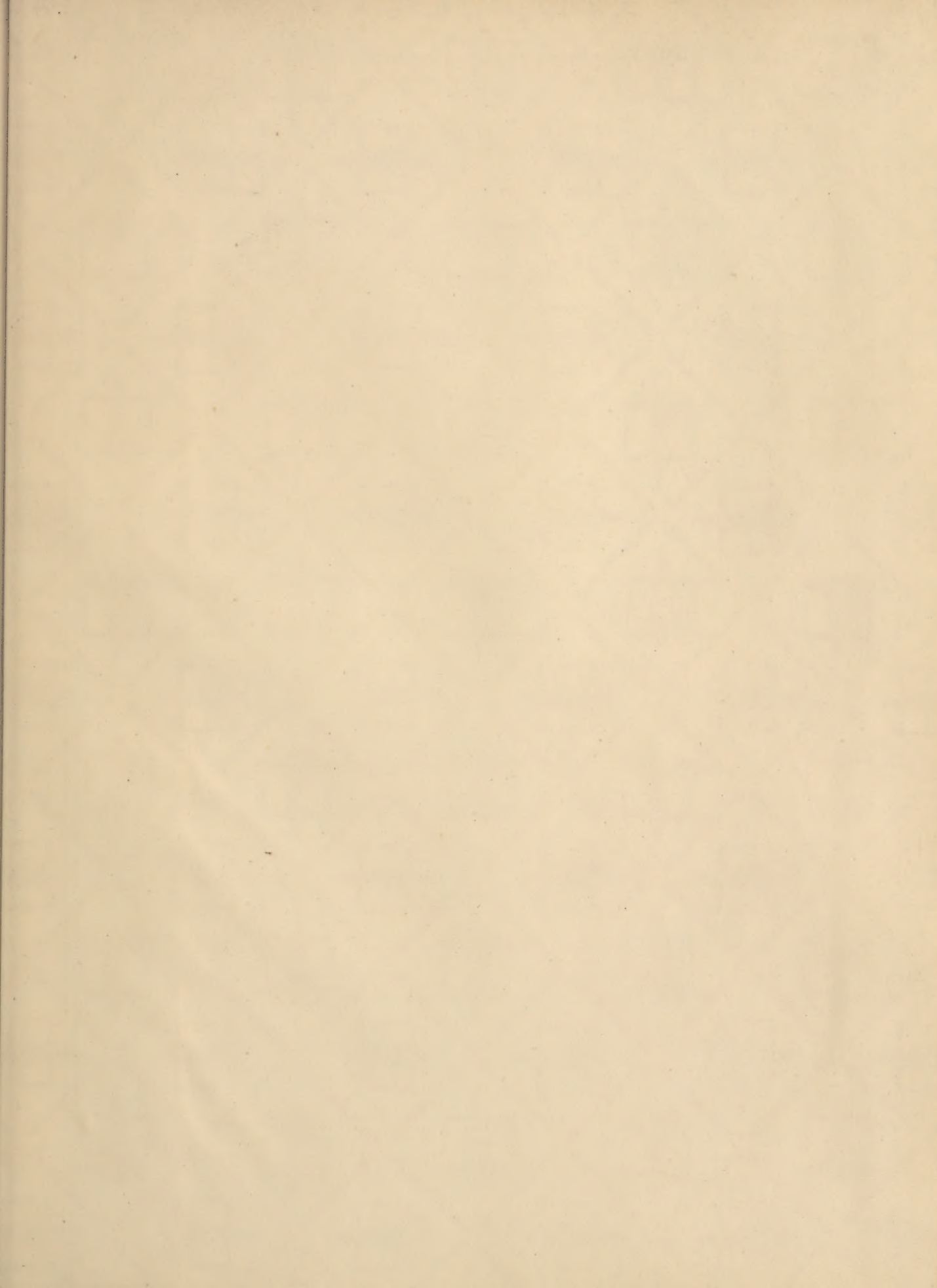
k. It is recommended that numbered station hospitals in semi-permanent buildings be permitted to requisition complete dental units and not be dependent on chest 60 alone.

l. I would like to state here that the M.T.M.D. report is one of the best reports we have in the field. We feel that it is the one report that is really read and through which action can be obtained.

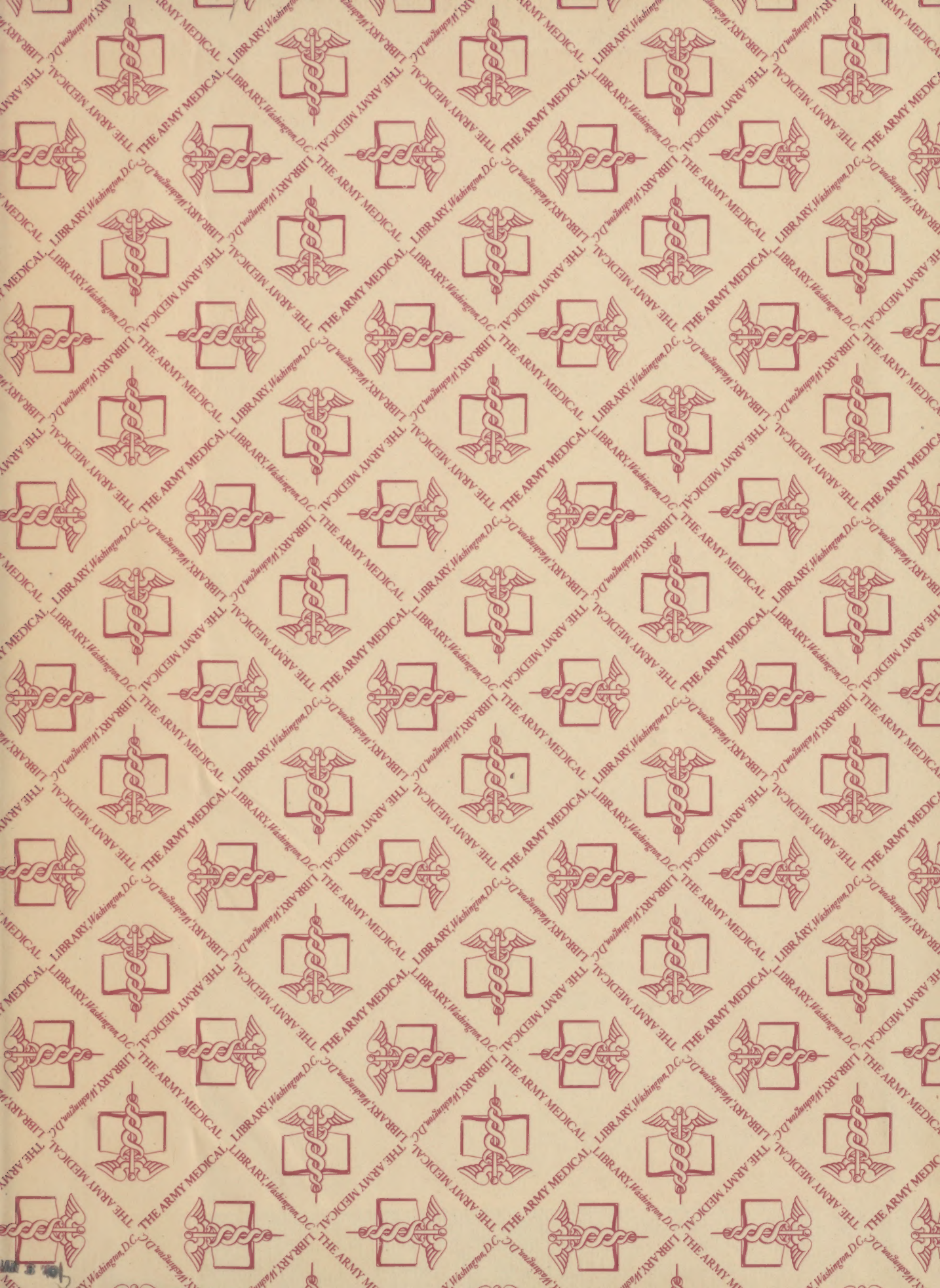
m. In conclusion, I would like to suggest that some one from the S.G.C. visit Greenland and other isolated commands (it may be other commands have been visited but Greenland has not) from time to time. Reports can be submitted and read indefinitely but a true picture and a subsequent understanding of the peculiar situation, difficulties and problems can not be reached without actually seeing the places in question.


OTHO R. HILL
Lt. Col. M.C.









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